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Cevaeria estebani Tavakilian, 2004 (Coleoptera, Cerambycidae): new country record from Amazonas, Brazil

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Abstract

We report the occurrence of *Cevaeria estebani* Tavakilian, 2004 (Cerambycinae, Cerambycini) for the first time in Amazonas, Brazil. This species was previously recorded from French Guiana and Bolivia. We provide a distribution map for *C. estebani* and photographs of the habitus of the new record and its potential mimetic species, the chrysomelid *Sceloenopla maculata* (Olivier, 1792).

Keywords

Cerambycinae, Cerambycini, Chrysomelidae, mimicry, Neotropical Region

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Introduction

Cerambycinae Latreille, 1802 is the second largest subfamily of longhorn beetles (Coleoptera, Cerambycidae), with 1,845 genera and over 12,400 species worldwide (Monné et al. 2017). The tribe Cerambycini includes two subtribes, Cerambycina with 88 genera and Sphallotrichina with 19 genera (Monné 2022; Tavakilian and Chevillotte 2022). The genus *Cevaeria* Tavakilian, 2004, belonging to Sphallotrichina, includes a single species, *C. estebani* Tavakilian, 2004, which is currently known from French Guiana and Bolivia (Tavakilian 2004). Herein, we provide the first record of *C. estebani* from Brazil, in the state of Amazonas. We also present a distribution map for *C. estebani* and photographs of the habitus of the new record and its potential mimetic species, the chrysomelid *Sceloenopla maculata* (Olivier, 1792).

Methods

The new record of *Cevaeria estebani* (identifier MLM0001) is deposited in the Invertebrate Collection of the Instituto Nacional de Pesquisas da Amazônia, Manaus, Brazil (INPA, curator: Marcio L. Oliveira). A permit for collection was provided to Gilcélia Lourido by the Instituto Chico Mendes de Conservação da Biodiversidade (process 10123-1). The photographed specimen of *S. maculata* (voucher CEIOC25637) belongs to the Coleção Entomológica do Instituto Oswaldo Cruz, Fundação Oswaldo Cruz, Rio de Janeiro, Brazil (CEIOC, curator: Márcio E. Felix). *Cevaeria estebani* was identified following its original description (Tavakilian 2004). The distribution map was constructed based on the material examined and literature records (Tavakilian 2004; Morvan and Morati 2011; Monné 2022). Records lacking

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coordinates were georeferenced using Google Earth Pro v. 7.3.4.8642, and the map was made using QGIS v. 3.22.5. The photographs of the specimens were made using a Leica DFC 500 digital camera attached to a Leica MZ16 stereoscope, and images were edited with Leica LAS 3D Viewer and LAS Montage v. 4.7 software.

Results

Cerambycidae Latreille, 1802
Cerambycinae Latreille, 1802
Cerambycini Latreille, 1802
Sphallotrichina Martins & Monné, 2002
Cevaeria Tavakilian, 2004

Cevaeria estebani Tavakilian, 2004

New record. BRAZIL – **Amazonas** • Beruri, Rio Purus; 04°28′14.3″S, 062°01′46.0″W; 8–9.VII.2009; G.M. Lourido leg.; mercury light trap; 1 ♂; MLM0001; INPA.

Distribution. French Guiana, Bolivia, and Brazil (Amazonas) (Fig. 1; Table 1).

Diagnosis. *Cevaeria estebani* (Fig. 2a) is recognized by the following combination of characters: tegument orangish red; antennae black except for scape orangish red, filiform, longer than body and extending beyond elytral apices by two antennomeres in males; serrate and reaching middle of elytra in females; antennomeres III–VII with longitudinal groove; prothorax transverse, lateral tubercles rounded; prosternal process as long as procoxal cavity; mesosternal process with a median depression; elytra black, with six irregular reddish-orange maculae on each elytron; elytral surface rather coarsely and densely punctate; meso- and metafemora with a short spine at inner apices; meso- and metatibiae distinctly enlarged to apex in males.

Color variation. Pronotum reddish orange with a black diamond macula in the middle (Bolivian specimen); size of the elytral maculae may be large in Brazilian specimen, or small in Bolivian and French Guiana specimens (Tavakilian 2004; Lingafelter et al. 2017).

Biology. According to Tavakilian (2004), *C. estebani* is active in French Guiana from June to September. There are no records on its biology and host plants.

Discussion

The new record presented here fills gaps in the geographic distribution of *Cevaeria estebani*. The occurrence of *C. estebani* in the mesoregion of Amazonas is explained by the environment in which it was found. Although the host plants of *C. estebani* are still unknown, previous studies have reported the species in the Amazon region; thus, its occurrence in Brazil, especially in the state of Amazonas, was expected.

Figure 1. Distribution of *Cevaeria estebani*. Red dot indicates the newly reported occurrence in Brazil (Amazonas). Yellow dots indicate previous records from the literature, as shown in Table 1.

Table 1. Occurrence records used to construct the distribution map of *Cevaria estebani*.

Country	Collection locality	Latitude	Longitude	Reference
French Guiana	Montagne de Kaw, Regina	04°35′23.2″N	052°10′56.1″W	Tavakilian 2004
French Guiana	Piste de Kaw	04°31′13.5″N	052°03′57.6″W	Tavakilian 2004
French Guiana	Piste Coralie	04°30′54.8″N	052°22′00.9″W	Tavakilian 2004
French Guiana	Bz (Zone Bélizon): Route forestière	04°16′38.1″N	052°38′35.7″W	Morvan and Moratti 2011
French Guiana	Cca (Zone Coralie-Cacao): Piste Coralie	04°31′11.9″N	052°26′32.0″W	Morvan and Moratti 2011
French Guiana	Kw (Zone Montagne de Kaw): Patawa	04°32′46.8″N	052°08′51.9″W	Morvan and Moratti 2011
French Guiana	Pistes forestières, RD 6	04°36′37.1″N	052°16′16.0″W	Morvan and Moratti 2011
French Guiana	Kou: Kourou	05°09′39.4″N	052°38′54.9″W	Morvan and Moratti 2011
French Guiana	BM (Zone Bas Maroni): St Laurent du Maroni	04°49′52.9″N	053°57′26.0″W	Morvan and Moratti 2011
Brazil	Purus River, Beruri, Amazonas	04°28′14.3″S	062°01′46.0″W	This publication
Bolivia	Buena Vista, Santa Cruz	17°27′29.1″S	063°40′07.8″W	Tavakilian 2004

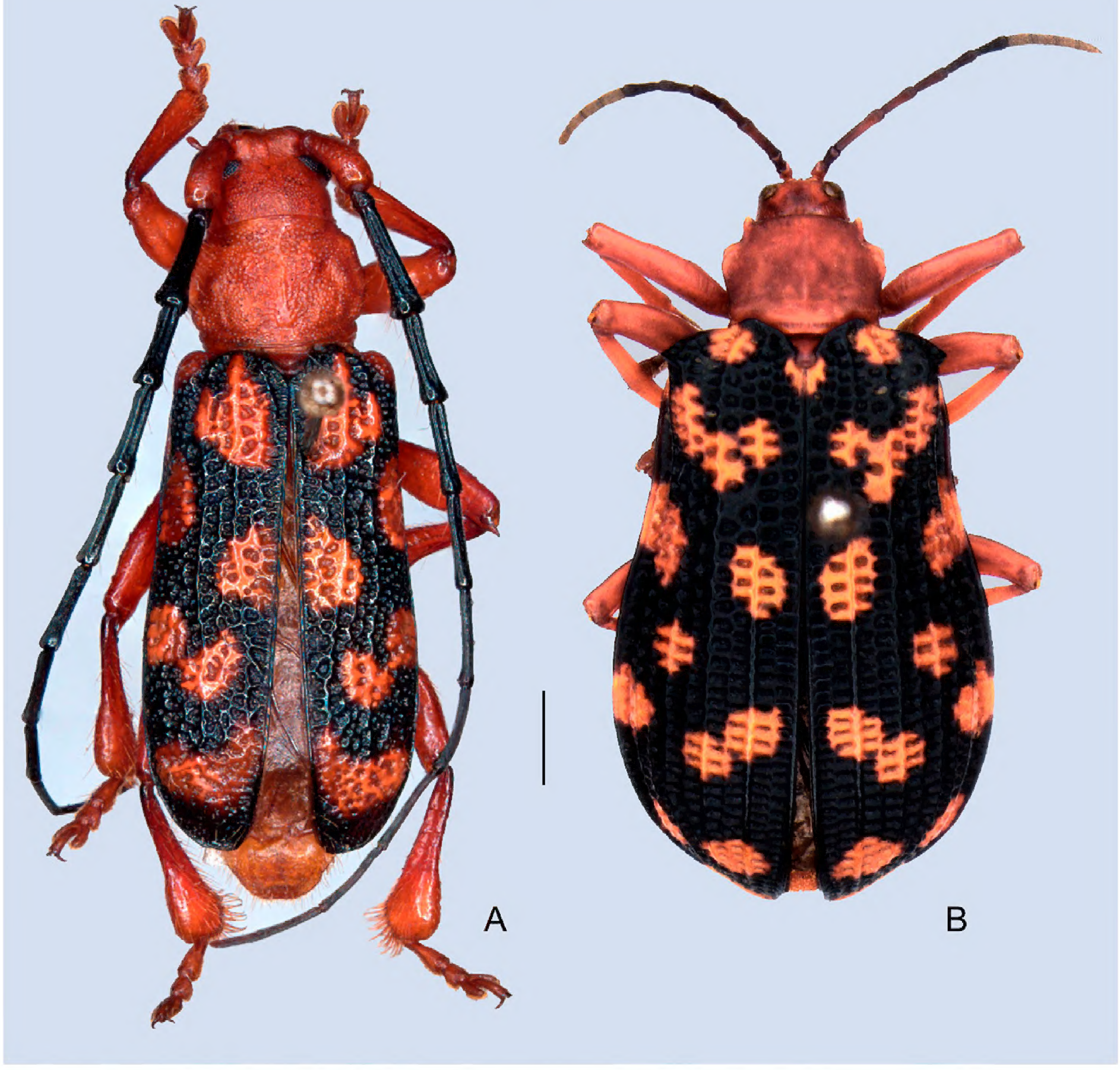

Figure 2. Habitus of *Cevaeria estebani* and *Sceloenopla maculata*. **A.** *Cevaeria estebani*, male, from Beruri, Amazonas, Brazil, 8–9.VII.2009, MLM0001, INPA. **B.** *Sceloenopla maculata*, female, from Santarém, Pará, Brazil, III.1923, CEIOC25637, CEIOC. Scale bar: 2 mm.

Six species of Cerambycidae present color patterns similar to *C. estebani*, with head, prothorax, and legs red or orangish red, elytra black (with or without blue reflections) with irregular red or orangish-red maculae and coarse punctures. This color pattern is also present in several Chrysomelidae, such as *Sceloenopla maculata* (Olivier, 1792) (Fig. 2b), a species distributed in Bolivia, Brazil (Bahia), French Guyana, Suriname (Staines 2015), and the genus *Ocnosispa* Weise, 1910 (Cassidinae, Sceloenoplini).

Several authors have already suggested that these taxa are potentially mimetic. Bates (1867) reported the color pattern similarities of *Streptolabis hispoides* Bates, 1867 (Trachyderini) and *Erythroplatys corallifer* White, 1855 (Rhinotragini) with the chrysomelid *Cephalodonta spinipes* (Fabricius, 1801), currently *Sceloenopla maculata*. Similarly, Lane (1951) discussed the resemblance and potential mimicry of *Zelliboria daedalea* Perty, 1832 (Piezocerini) with chrysomelid species of the tribe Hispini. Finally, Tavakilian (2004) described two cerambycid species from French Guiana with remarkably similar black and red color patterns, *C. estebani* Tavakilian, 2004 (Cerambycini) and *Frankluquetia inexpectata* Tavakilian, 2004 (Lamiinae, Hemilophini). He suggested the possible mimicry among these species and *Sceloenopla* and other four cerambycine species, namely *Streptolabis hispoides* (Trachyderini), *Zelliboria daedalea* (Piezocerini), *Ctenodes decemmaculata* Olivier, 1808 (Trachyderini), and *Erythroplatys simulator* Gounelle, 1911 (Rhinotragini).

It is unclear, however, which taxa are models and mimics or what might be the level of distastefulness or toxicity in each species. The similarities between *C. estebani* and *S. maculata* is remarkable because the position of the red maculae on the elytra are very alike. More studies and fieldwork are needed to better understand the evolution of the color patterns of these species and confirm their mimicry.

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Authors' Contributions

Conceptualization: MLM. Methodology: DS. Formal analysis: CSC. Resources: MLM. Writing – original draft: CSC. Writing – review and editing: MLM, DSS. Visualization: CSC, DSS. Funding Acquisition: MLM. and Supervision: DSS, MLM.

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